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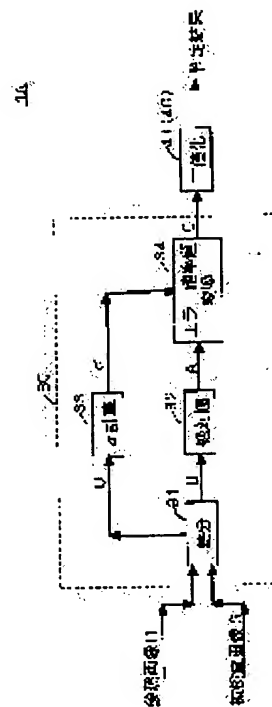
## (54) PATTERN INSPECTION SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a pattern inspection system in which the defect of an image to be inspected can be detected while taking account of the effect of a noise component.

SOLUTION: A pattern inspection system 1A generates a difference image U between an image to be inspected S and a reference image R and converts the pixel value of each pixel in the difference image U into an error probability value  $E_r$  using a standard deviation  $\sigma$  concerning to the pixel value of the difference image U. An absolute value image A generated based on the difference image U is used in the conversion. The error probability value  $E_r$  thus obtained represents the degree of defect concerning to each pixel of the image to be

inspected S and a decision is made whether a defect of an object to be inspected is presents or not at a position corresponding to each pixel of the image to be inspected S based on the relation of magnitude between the error probability value  $E_r$  and a specified threshold value.



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